

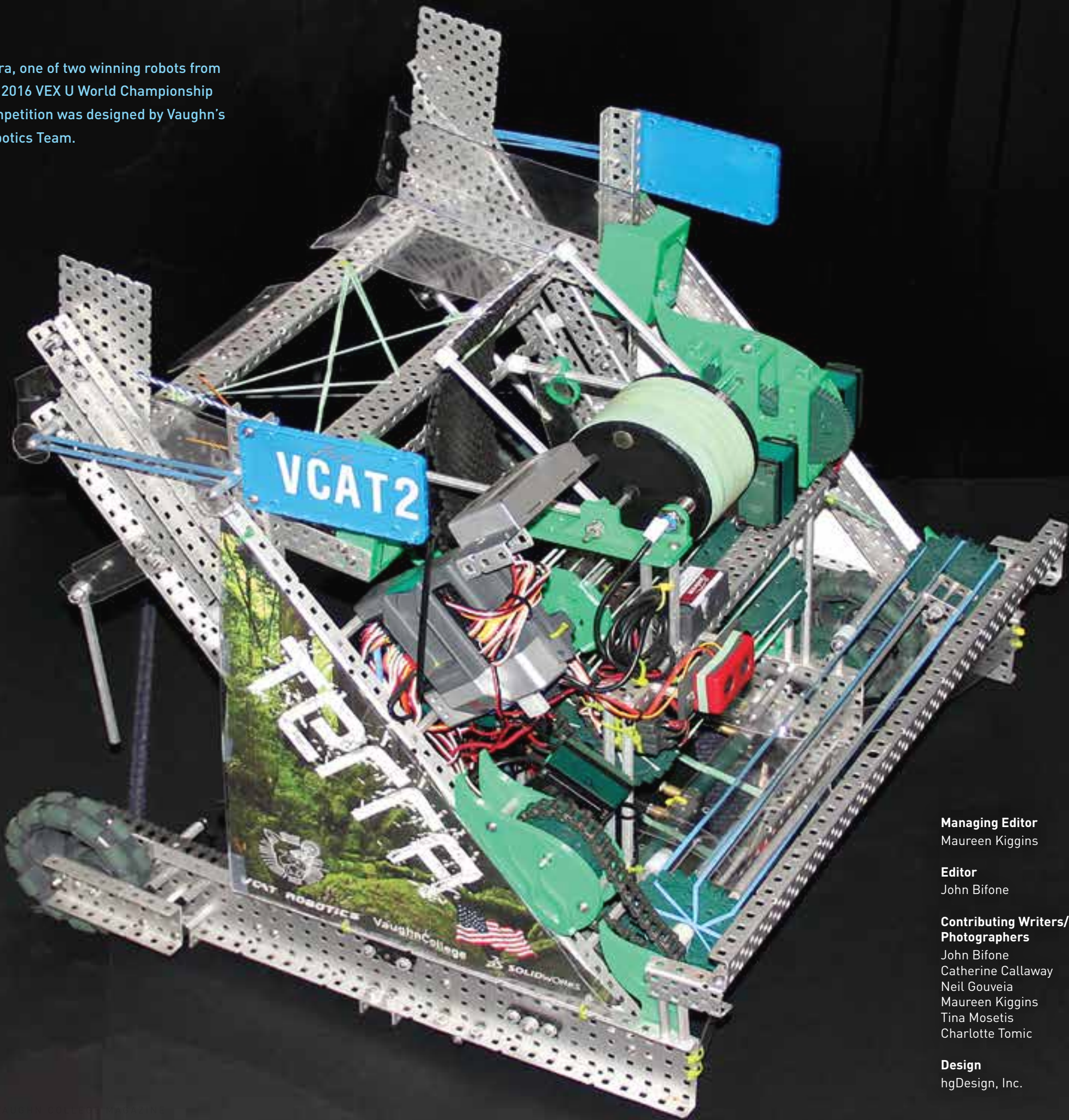
Vaughn

COLLEGE MAGAZINE FALL 2016



ROBOTICS TEAM BRINGS HOME THE GOLD

Terra, one of two winning robots from the 2016 VEX U World Championship competition was designed by Vaughn's Robotics Team.



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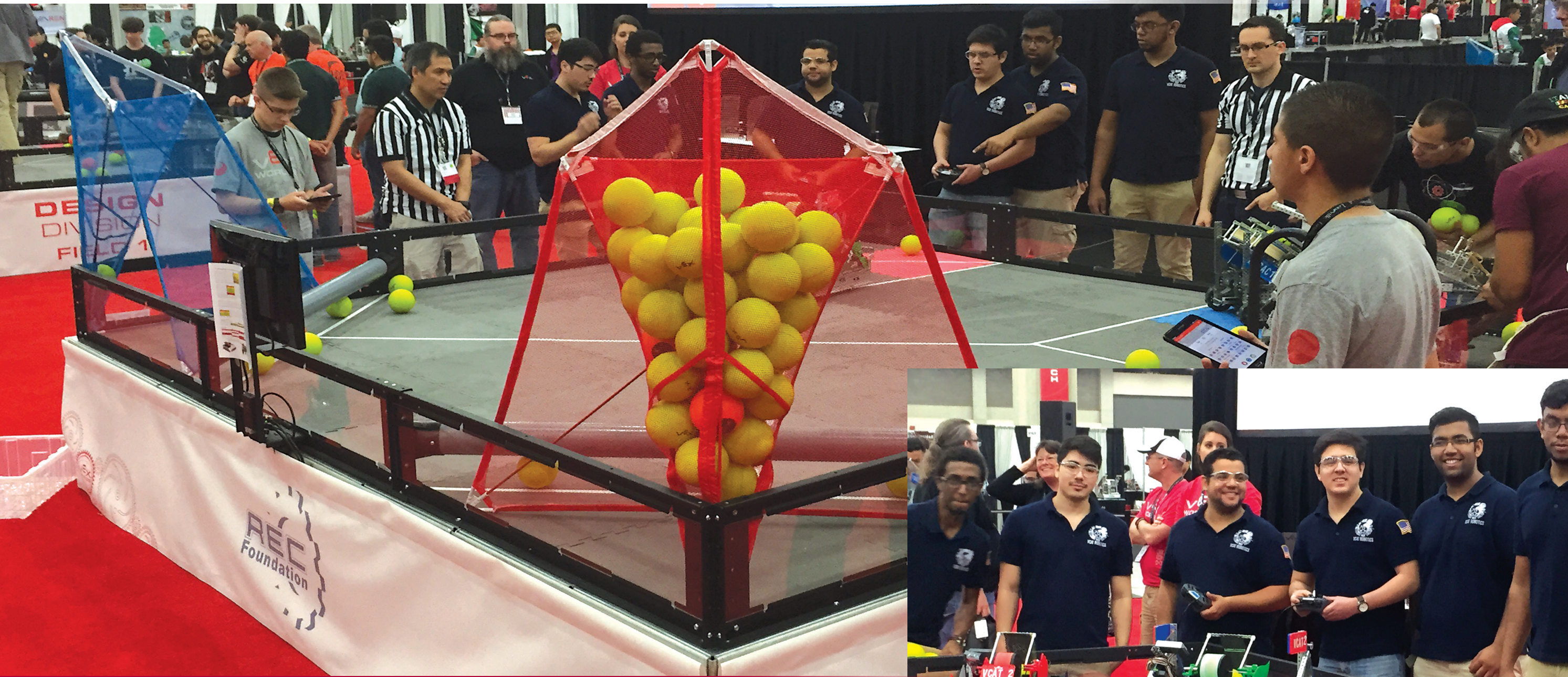
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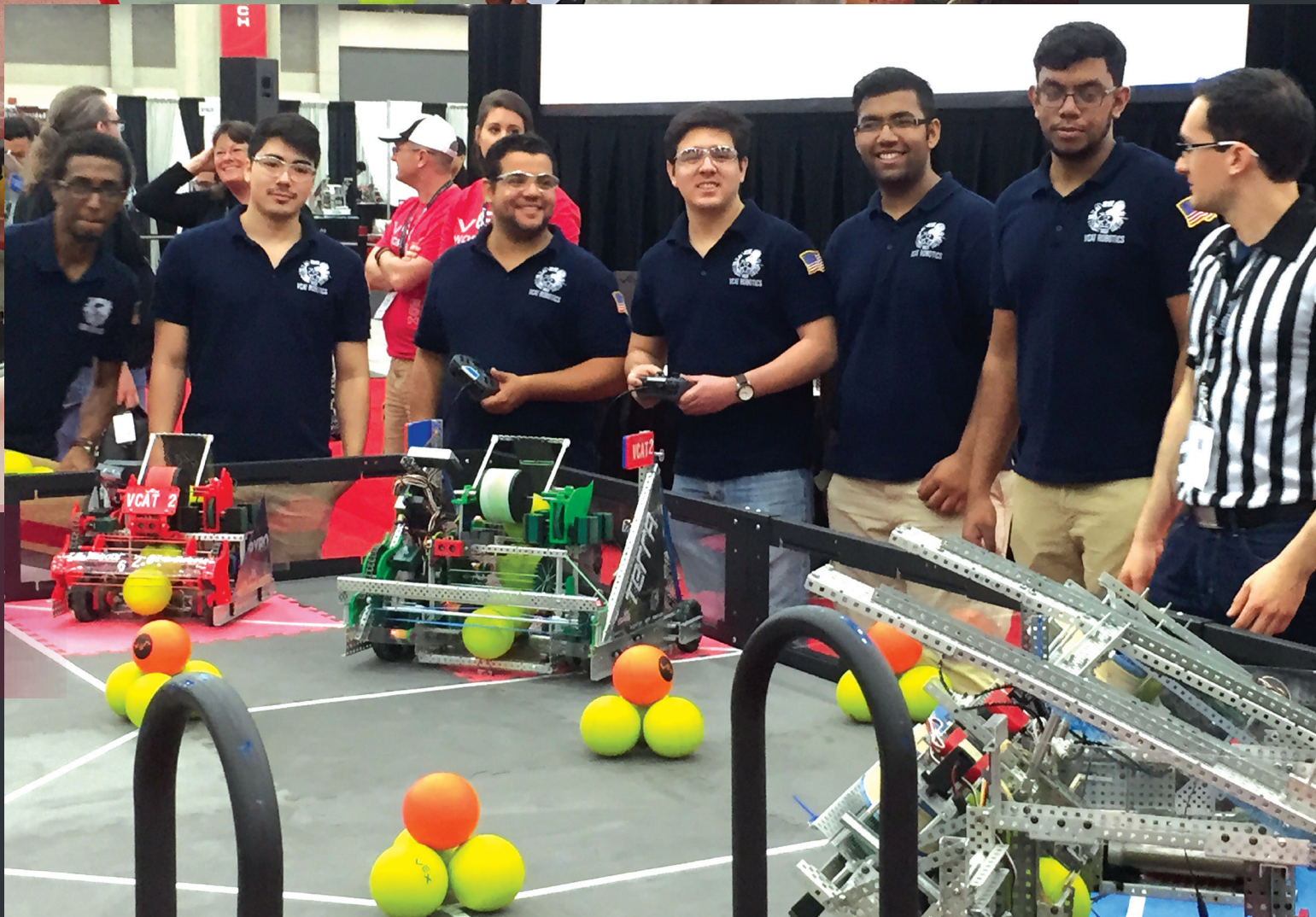
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VAUGHN VEX U ROBOTICS WORLD CHAMPIONS



It took eight years and many dedicated students to claim the title of World Champions at the 2016 VEX U Robotics Competition in Louisville, Kentucky.





THIS WIN demonstrates Vaughn's ongoing success in the area of robotics and further positions Vaughn as a powerhouse in robotics education. Vaughn's group of 12 students who were members of the 2015-2016 robotics club spent countless hours refining their two award-winning robots, Terra and Pyro. The club's team also competed in Mexico, as well as regionally, helping them to make continuous improvements.

VEX U provides the world's top university engineering students with a fast-paced, sports-style robotics competition. The playing field changes yearly with each new competition, enhancing the challenge. Vaughn's world-class team competed in this year's VEX "Nothing but Net" challenge designing two robots that could act both offensively and defensively pitching balls into a net. Each match lasted two minutes with 45 seconds done autonomously, and one minute 15 seconds of driver-controlled mode. In the last few seconds the larger robot had to lift the smaller robot 12 inches. Students must use mechanical, electrical and programming skills to build a competitive robot. Vaughn has an edge



over other teams because of the greatest percentage of 3D-printed parts on any robot. Vaughn's Robotics Club expanded under the leadership of alumnus Jefferson Maldonado '16 who used his naval training to guide the team's arc to success. In the military, Maldonado started as an operator studying catapult and arresting gear, was promoted to maintenance manager, and ultimately worked as supervisor. After being honorably discharged, he enrolled at Vaughn with the goal of getting a degree in robotics. As a freshman, Maldonado swung into action. He studied exactly what needed to be accomplished for the VEX U competition and developed a strategic plan to help the team win. Maldonado also made sure that the team invested in the next generation by mentoring students at regional high schools and hosting a qualifying competition on campus. In

2014, eight high schools participated and in 2015 the number of schools more than tripled. With his leadership, the team attended the 2014 championship and were the first US team to make it to the finals but were ultimately beaten by a team from Mexico. In addition to taking second place, the team also received the Amaze Award for the most well-rounded and top-performing robot. In the following year as president, Maldonado grew the club through hard work and dedication. He trained Alex Uquillas '16 to be his successor and together they secured new club members and achieved sixth in world in 2015. Bilal Rashid '20, who is the new robotics club president, couldn't be more excited about this year's challenge. Over the summer, Rashid worked diligently on the new challenge. Notes Rashid, "It



MEMBERS OF THE ROBOTICS CLUB SPENT COUNTLESS HOURS REFINING THEIR TWO AWARD-WINNING ROBOTS, TERRA (LEFT) AND PYRO (BELOW) TO BRING HOME THE WORLD-CHAMPION TROPHY.



takes a lot of time out of your schedule. All summer, I had to reassure my parents that I was working late at the club with robots!" The students work in the College's dedicated robotics club room where they combine theory with hands-on experience. With many of the winning team having graduated and taken positions in their desired profession, the club has seven members, primarily rising sophomores. Rashid's goal is to add 15 new students to the team this fall. "I'm determined to continue the success of the club's past-presidents Maldonado and Uquillas." Rashid credits the outstanding Vaughn faculty members for the team's overall success, including Chair of the Engineering and Technology Department and Club Adviser Dr. Hossein Rahemi, Associate Professors Dr. Shouling He and Khalid Mouaouya, Assistant Professors Dr. Yougashwar Budhoo and Dr. Amir Elzawawy, and Vice President of Academic Affairs Dr. Paul LaVergne. Rahemi remarked about the team's commitment, "I am very proud of our team's performance and accomplishments; this type of success only happens when a team develops a desire to be the best. Vaughn's team, under the leadership of Jefferson and Alex, demonstrated that success through knowledge, discipline, devotion and determination." He, whose expertise is in the area of mechatronics, is also very impressed with the club, "I am so proud of our students who work extremely hard. The training the students receive will help them secure good internships and ultimately excellent jobs in this burgeoning field."

The 2017 challenge is called VEX "Starstruck."



Before the team competes in the 2017 World Robotics Competition, it will participate in many qualifying matches including a rematch with the Universidad Tecnológica de Querétaro in Mexico, the same team that lost to Vaughn in the 2016 finals.

Rashid notes, "The difference between last year's competition, VEX 'Nothing but Net,' and the upcoming one is that the focus will be on the mechanical aspect of the robot, not its programming." This year, the challenge is called VEX "Starstruck," and the robot has to launch stars and tubes over a fence. The opponent can throw the stars and tubes back over, and at the end, the team with the least amount of stars is the winner. The objective is for Vaughn's robot's fire rate to be faster than the opponents.

Most of the students who are members of the robotics team are enrolled in the bachelor of science in mechatronic engineering, one of only four Engineering

VEX WORLDS ROBOTICS CHAMPIONS 2016

2016 TEAM MEMBERS:

Norrin Abreu '20
Andriy Belz '20
Terry Cetoute '16
Christina Deluca '20
Isaiah Ervin '17
Nizamadeen Khedaru '20
Jefferson Maldonado '16
Kent Ogisu '16
Bilal Rashid '20
Niki Taheri '20
Alex Uquillas '16
Thomas Wolday '20

Accreditation Commission ABET-accredited programs in the country. Enrolling students since 2007, this was Vaughn's first engineering program.

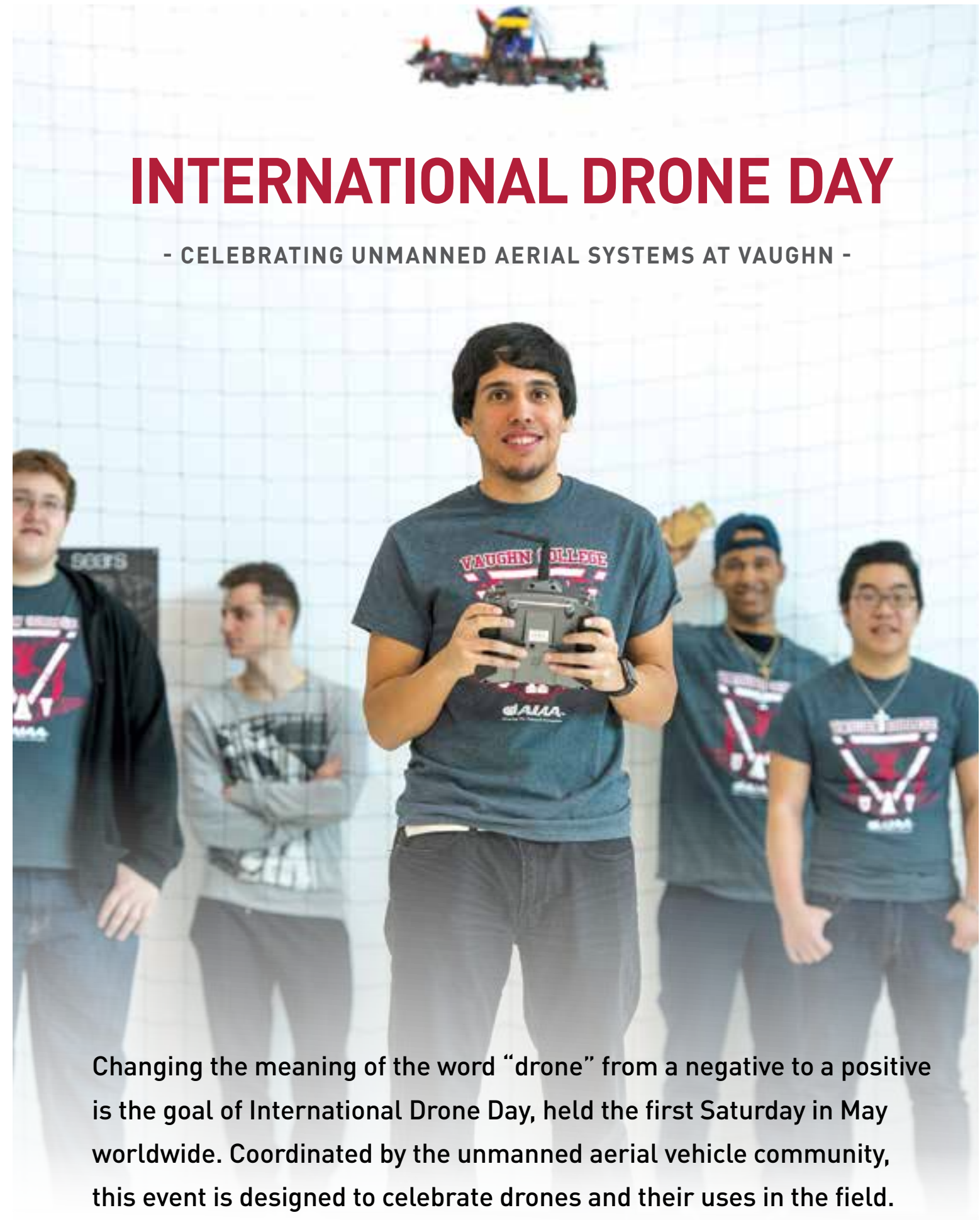
Past-president Maldonado is an outstanding example of a true success story for Vaughn and the program. A May 2016 graduate, Maldonado accepted a job a full semester before commencement. One month after graduation, he started as a robotics engineer with ArcBest Technologies, a subsidiary of ArcBest CorporationSM, a transportation enterprise located in Fort Smith, Arkansas.

The goal for the coming year is to be the only team to take the World Champion title twice. The Vaughn community wishes them the best of luck.

Check the website (www.vaughn.edu) and follow Vaughn on social media (Facebook.com/VaughnCollegeFB, Instagram @Vaughn College and Twitter @VaughnCollege) April 19 to 25, 2017 for updates on the team's progress.

INTERNATIONAL DRONE DAY

- CELEBRATING UNMANNED AERIAL SYSTEMS AT VAUGHN -



Changing the meaning of the word "drone" from a negative to a positive is the goal of International Drone Day, held the first Saturday in May worldwide. Coordinated by the unmanned aerial vehicle community, this event is designed to celebrate drones and their uses in the field.

Vaughn College held its first International Drone Day event this year and hundreds of community members, students and faculty gathered to design, build, and test their own aircraft in specially designed nets in the College's hangar. Vaughn's Unmanned Aerial Vehicle (UAV) Club, captained by student Waseem Hussain '17, developed the event in conjunction with Dr. Maxine Lubner, Vaughn's management department chair and Loretta Alkalay, drone law expert, aviation attorney and former legal advisor to the Federal Aviation Administration (FAA), and adjunct faculty member at Vaughn.

The event included a panel discussion, moderated by Lubner, about the current and future state of unmanned aerial systems (UAS) for recreational and commercial uses. The panelists included the Honorable John Goglia, independent aviation safety expert, former National Transportation Safety Board (NTSB)



HUNDREDS OF COMMUNITY MEMBERS GATHERED TO DESIGN, BUILD, AND TEST THEIR OWN DRONES

member and Vaughn adjunct faculty member; Alkalay; Steve Cohen, president of Drone User Group; Adam Dershowitz, Exponent Inc. managing engineer; Jimmy Oliveri, UAV pilot and cinematographer; and Edward Kostakis, producer, creative director and multi-rotor pilot for Xizmo Media. The discussion covered legal updates for drone users, science, technology, engineering and math education, the history and future of flying drones and the commercial uses of drones in New York City.

Kostakis spoke about the use of drones on commercial film sets and what it's like to work with directors using drones. "Drones offer an exciting career opportunity. Aerial cinematography comprises about 90 percent of our business. Although many drones are now built ready to fly right out of the box, it's best to know about the workings and capabilities and the legal issues involved



Xizmo Media's commercial drone, capable of lifting 100 pounds.



▲ Management Department Chair Dr. Maxine Lubner (standing) moderated a panel discussion of aviation experts including adjunct faculty members the Hon. John Goglia (far left) and Loretta Alkalay (center).

because the more you know the more successful you'll be at your craft," said Kostakis. One of the highlights of the day was a demonstration of a commercial drone, used by Xizmo Media, that can lift 100 pounds.

Alkalay also noted, "Our first drone day was fantastic with wonderful speakers and workshops that were well attended. The event received very positive press, including coverage in Forbes. Everyone had a great time and is looking forward to 2017."

The use of UAS for a variety of commercial and humanitarian needs continues to be a growing field. Vaughn plans on expanding its offerings in the field to educate the next generation of students and drone enthusiasts. These educational

programs will prepare skilled engineers in creating and flying these systems, while also offering training to fly in the field, to secure exciting, high-paying careers.

The next International Drone Day event will be held on Saturday, May 6, 2017. Lubner hopes to build on last year's events, covering information

about the changing regulatory landscape for drones, current controversies and additional topics including insurance and risk assessment. "We are proud of the College's growing expertise in this arena and our leadership role in training the next generation of leaders in the drone industry."



► Associate Professor Dr. Shouling He works with UAV club members in Vaughn's automation technology laboratory.

Susan M. Baer



VICE CHAIR, LONGTIME TRUSTEE AND AVIATION PIONEER REMEMBERED

Susan M. Baer, who shattered longstanding gender barriers at The Port Authority of New York and New Jersey by becoming the agency's first female aviation director and the only person to manage all three major New York City metropolitan area airports, died on Tuesday, August 9, 2016. She served on Vaughn College's board of trustees for more than 20 years and served as vice chair for 13 years.

"Sue's contribution to Vaughn and the aviation industry cannot be matched," said Vaughn College Board of Trustees Chair Thomas J. McKee. "Her passion and allegiance came through in everything she touched and she will be profoundly missed."

Baer, a natural leader who was persuasive without ever being overbearing and firm without ever making others feel threatened, was compassionate to her core. Her illustrious transportation career that spanned four decades began at the Panama Canal with a non-governmental agency, where she worked until the United States turned the facility over to the Panamanians.

After returning to the United States, Ms. Baer started her 37-year tenure with The Port Authority in 1976, managing The Port Authority Bus Terminal and the Lincoln Tunnel before moving to the agency's aviation department, where she would leave her greatest mark on the agency and the region, holding every top job in the nation's largest aviation system. She was the first female appointed as general manager to—in succession—LaGuardia, Newark Liberty International and John F. Kennedy International airports, before being named aviation director in 2009. Succeeding at a time when The Port Authority was a male-dominated agency, Baer understood the importance of being a role model and mentored other women who would eventually follow in leadership roles at the airports.

"The first is fine, but I don't want to be the only," Baer

told USA Today in a 2013 interview about her career and role as the agency's first woman aviation director. "What I've tried to do is give other women opportunities and that's something all women should be doing. It was hard for us to get here but we ought to be making it easier for the people who are coming behind us."

Patrick J. Foye, executive director of The Port Authority of New York and New Jersey said, "Sue Baer's career was one of many firsts; first woman to run many of our major transportation facilities and first female director of aviation. She left a legacy of professionalism, integrity and leadership at The Port Authority. Her colleagues responded to her service with fierce loyalty. Sue was a great public servant."

Airport modernization efforts, including overseeing the revamping of old and building of new terminals at Newark Liberty and Kennedy airports, was one of Baer's priorities. She had a ready response for those who asked her when all the work would finally be done.

"I tell them: I hope never, because that means we've stopped working and we're not really meeting the needs of the future," Baer also told USA Today. "You've always got to be doing something."

Pushing for NextGen, the overhaul of the nation's air traffic navigation system that will allow planes to fly more safely and efficiently, was another of Ms. Baer's major goals during her directorship, as she fought to ease air traffic congestion over the New York City region—the world's



most crowded airspace. Her dedication to advancing NextGen earned her an appointment by US Secretary of Transportation Raymond LaHood to his Future of Aviation Advisory Committee. In addition, she was appointed by Federal Aviation Administrator Michael Huerta to his NextGen Advisory Committee.

On Sept. 11, 2001, Baer was at the helm of Newark Liberty and watched the destruction of the World Trade Center before helping to shut down airport operations and restart them in the anxiety-laden days after the terrorist attack. Later, she oversaw the installation of a simple memorial, with tall silver Roman Numerals "IX, XI," set in an outside area of the airport's administration building.

Following her 2013 retirement from the Port Authority, Baer joined Arup, one of the world's leading professional consulting firms, where she became the Americas aviation leader responsible for the strategic planning for major aviation projects and overall vision of master planning options. In 2015, she was named the global aviation business leader, overseeing consulting efforts at more than 100 airports worldwide.

"Come to me with a problem," she was fond of saying, "and you'll leave with a project."

"Sue was a pillar of the Vaughn community and provided critical input as we developed the airport management curriculum," said Vaughn's President Dr. Sharon B. DeVivo. "She was also a regular speaker on campus, provided access to her large network of aviation

contacts to support students and faculty, and she had a special affinity for encouraging women in aviation." Her most recent contribution was securing Huerta as the commencement speaker this past May.

Baer earned a bachelor's degree in urban studies and anthropology from Barnard College and a master's degree in business administration from New York University. She held memberships with the International Aviation Women's Association, Airports Council International-North America, the American Association of Airport Executives (AAAE), the Newark Museum and the Wings Club, in addition to her service on Vaughn's board of trustees.

In lasting tribute to Baer, her friend and fellow Vaughn College Board Member Thomas Marotta has established a fund to honor the woman who made an enduring impact on aviation and devoted her time and enthusiasm to an institution which she believed made a difference in the lives of students. His gift of \$10,000, along with donations from other friends and colleagues, will be used for scholarships that will forever carry her name.

To make a donation in her honor, contact Neil Gouveia at neil.gouveia@vaughn.edu or 718.429.6600, extension 112.

*Article Courtesy of Portfolio, the blog of
The Port Authority of New York and New Jersey.*

VAUGHN COLLEGE
ANNUAL FUND
2016-2017

Annual giving is a central part of Vaughn's fundraising efforts and provides Vaughn with the responsiveness and flexibility necessary to fund emerging opportunities in scholarships, student programming, faculty research and academic initiatives. Every gift in any amount improves the Vaughn experience for our students.

"I'm proud to be a supporter of the Annual Fund at Vaughn College because its programs improve the quality of the life of the greater community. Technology is about innovation and this is what brings our civilization forward. I'm grateful to Vaughn for the role it has played in my professional success."

— John Pavon '02

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For more information contact
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THE POWER OF ONE.

Your gift of \$1 dollar a week—\$52 a year—will provide new opportunities for Vaughn students.

DOWLING STUDENTS FIND A NEW ACADEMIC HOME

Dowling College, located on the eastern end of Long Island, officially closed its doors this summer leaving many students, particularly aviation students, uncertain about where they would finish their degree. Since the announcement of the closing, Vaughn College has been actively assisting these students.

Vaughn quickly developed and hosted online informational sessions to help students with the entire transfer process. Dedicated counselors offered individual academic and financial evaluations, and waived the application fee along with the residency requirements for transfer students with fewer than 30 remaining credits left to graduate. Vaughn also explored flight training options for Dowling students that might enable them to retain their training hours.

Dowling President Albert Inserra announced on Monday, August 1 that the college had reached teach-out partnerships with five colleges including

Vaughn to accept its students as the institution continued to wind down its operations. Stemming from this announcement, Vaughn College admission counselors participated in a transfer fair at Dowling on Tuesday, August 2 and Wednesday, August 3 to answer questions and assist each student in making the transition as seamless as possible.

Ernie Shepelsky, vice president of enrollment services at Vaughn, notes, "We've made an extraordinary effort to accept a large number of the students' transfer credits and match their financial aid packages to minimize the financial impact. We want to help them complete their degree as soon and as economically as possible." As of September 16, twenty-seven of approximately eighty aviation students from Dowling have applied to Vaughn and been accepted. According to Shepelsky, "Ten of those students are now enrolled at Vaughn and another seven are considering enrollment."



AIR TRAFFIC CONTROL PROGRAM MEETS CRITICAL NEED

An elite group of 14,000 Federal Aviation Administration (FAA) air traffic control (ATC) specialists are tasked to guide pilots, their planes and 2.2 million daily passengers from taxi to takeoff across the United States. According to the FAA there were more than 8.7 million commercial flights in 2015 and more than 7,000 aircraft in the sky at any given time.

Every minute of every hour of every day, air traffic controllers are working to safeguard our national airspace system.

Following a 2013 hiring freeze, with two anticipated waves of retirement (from 2018 to 2021 and from 2036 to 2039), and the number of air traffic controllers at a 27-year low, the shortage is threatening to increase flight delays. The critical need for new air traffic controllers represents an exciting aviation career opportunity for students. The FAA plans to hire more than 1,700 in fiscal year 2017. Vaughn College is recognized by the FAA as one of only

33 Air Traffic Collegiate Training Initiative (AT-CTI) partner institutions in the country and one of three in the Northeast. Vaughn provides specialized training for students interested in air traffic control and aviation careers.

Vaughn was at the forefront of ATC training as one of the first of 13 institutions to enter into an agreement in 1999 with the FAA when they created the AT-CTI. The ATC program was developed to meet the employment demands of the FAA following the required retirement of controllers from the 1980s. The AT-CTI designation

enabled Vaughn-recommended graduates to qualify for the FAA's aptitude exam. In order to be recommended students had to take specific coursework in air traffic control basics and weather. Recommended graduates who passed the FAA screening and began training at the FAA Academy in Oklahoma City, Oklahoma were eligible for accelerated basic training.

Vaughn College also formed a fast-track program that enabled students who received an associate or bachelor's degree from another college or university, in an appropriate business-

related field like management, to take an additional 30 credits of core courses in aviation, management and air traffic control. Applicants who had earned an academic associate or bachelor's degree in a non-business related field were also eligible for the fast-track program by taking an additional three to 21 credits in math and business, depending on their undergraduate study. In 2013, the FAA announced it would no longer hire directly from AT-CTI schools, and only accept applicants from the general public. According to Domenic Proscia, Vaughn College vice president of training, "We had just purchased an air traffic control simulator and supporting equipment, and had changed our curriculum to make it a very simulation-intensive training to provide students with hands-on experience. Our students received coursework not just in the theory of air traffic control, but simulation in tower and radar requirements."

The training regimen and proficiencies needed to become an air traffic control specialist are difficult in this highly competitive entry-level employment opportunity. After completing all of the academic coursework at Vaughn College, selected applicants must successfully complete all required training at the FAA Academy in Oklahoma City. Vaughn has UFA, Inc., air traffic simulation and voice technology and radar lab equipment, taught by instructors who have experience in tower, terminal, radar, non-radar and enroute.

For those who attend Vaughn and train in the ATC simulators, the training is an advantage. Students learn on the same airspace that the FAA uses at its Academy so those who take the coursework leave with a jumpstart. You will find Vaughn graduates working in ATC towers in all major New York metro airports and across the country.

In July 2016, Congress passed The Air Traffic Control Hiring Improvement Act of 2016 requiring the FAA to create a pool of consideration for military veterans and graduates of AT-CTI institutions. This immediately opened up a call to recruit 1,452 new ATC positions and the FAA accepted applications for positions from August 8 to 15, 2016. Vaughn quickly informed its current students and alumni of the FAA's announcement and provided letters of recommendation to those who met the qualifications in place in fall 2013. More than 101 graduates received letters of recommendation.

According to the FAA, the 2016 median annual wage for air traffic control specialists is \$127,805. Salaries increase as specialists complete each additional training phase. Advanced controller salaries also depend on the location of the facility and the complexity of the airspace. Becoming an air traffic controller is a vital, lucrative and enticing, yet demanding career path for students to consider.

Every minute of every hour of every day, air traffic controllers are working to safeguard our national airspace system.

Michael P. Huerta

Administrator of the Federal Aviation Administration (FAA)

Talks about Careers and the Future of Aviation



Saturday, May 21, 2016, addressing students.

FAA Administrator Michael P. Huerta delivered the commencement address to the class of 2016 in the William R. DeCota Hangar, and was awarded an honorary degree by Vaughn College President Dr. Sharon B. DeVivo.

Huerta is responsible for the safety and the efficiency of the largest aerospace system in the world. He oversees a \$15.9 billion-dollar budget, more than 47,000 employees and the FAA's multi-billion dollar NextGen air traffic control modernization program.

Prior to commencement, he was interviewed regarding his views on the future of the aviation industry and his successful career path.

What would you advise Vaughn graduates do to find a good position in the aviation industry?

Of course the traditional positions exist in the industry, along with new careers that have developed as a result of burgeoning technology, but I can say a major focus is to attract and develop more pilots.

Certainly, air traffic control has always been an attractive field but it is, of course, a very competitive arena. So, I would say that graduates need to determine their line of sight and keep their minds open about a variety of positions that will enable them to break into aviation.

Technology has made some positions much more interesting than one might expect. For example, people tend to think of maintenance as a less exciting job field, but this area has evolved to a point where it's a much more technical type of operation that requires employees that have computer and analytical skills; workers now need to know how to use and leverage data.

So, the bottom line is not to look for just one job position like being a pilot or working in maintenance, but to look at your skills: engineering, data, etc. and look at all the places in the industry where those skills can be applied. The aviation industry employs 11 million people in the US so, I'm confident if students keep their options open, they will be able to break into the field.

Where do you see job prospects in the aviation industry?

A trap a lot of people fall into is the pressure from childhood of determining "what you want to be when you grow up." I say it's best to determine what you are passionate about and where can you make a difference. You don't have to have it all figured out. Your first job is just that—a first job—it will get you in the door. At your first job, you can learn and be open to trying something different in order to have a full and rewarding career. Don't get caught up in what others think you should do—follow your passion and keep your mind and options open.

What do you anticipate the role of drones will be in commercial aviation in the near future?

Drones are a fast growing segment of the industry. Since last December, over 530,000 drones have been registered; whereas, there are about 320,000 aircraft in the traditional registry and it took over 100 years to get there! There will certainly continue to be great growth in the drone industry. Everyone is still trying to figure out various commercial applications for drones which include many helpful uses such as enhancing the inspection of smoke stacks, power plants, pipelines and railroad tracks, etc. For example, unmanned aerial vehicles (UAVs) can fly over tracks and assess their condition so companies can then send out inspectors to review areas of concern—this is an efficient use of drones to enhance safety.

We also see that the recreational use of drones serves as an exciting way to bring people into the aviation industry. People who never thought about it before may become pilots. Our job is to figure out how to integrate drones into aviation systems.

How do you see technology improving aviation in the short and long-term?

Advances in technology have made the industry safer for pilots and passengers. For example, the angle of attack is the angle of an aircraft in the air and the relation between speed and power that can cause an aircraft to stall. Now, a life-saving technology enables us to automatically monitor the angle of attack. These types of marvelous technological innovations are in widespread use throughout the system. We have completed all foundational technologies for our modernization process and are currently building the applications on top of that.

Another example of updated technology is the utilization of global positioning systems (GPS) instead of radar for navigation. It gives us a more precise look at how aircraft is moving and makes it much safer because we have a constant view of what's going on.

Technology helps the aviation industry make things more efficient. We are halfway through deploying the Data Comm system. Today, in a "non-data comm world," if a pilot wants to get clearance to leave the airport, a controller gives instructions to the pilot who will write down the instructions and manually input them into the airplane's flight management system. An error can happen if a pilot hears the instructions incorrectly or if the pilot is told something incorrectly. Then, it's possible that a pilot can incorrectly input the hand-written instructions into the flight management system. Data comm automates that process. Instructions are automatically sent from the controller to the pilot and automatically inputted into the system. This eliminates room for errors and is a big time saver. By way of example, the summertime in the Northeast can be filled with thunderstorms, so a pilot may have filed a flight plan but as a result of changing weather conditions the pilot may need to ask for a reroute and have to go through the process all over again; now the reroutes can be conducted more rapidly and the plane can get out faster.

How did your education help you achieve your success?

I am only the third FAA Administrator that wasn't a pilot. My background in management and technology enabled me to learn how to deal with and manage large, complex technology issues in a huge industry and to infuse innovation and change into industry. Collaboration across the industry and between the FAA and all the systems we regulate is a big management challenge. It's founded in technology and highly sophisticated operations with great technological teams. Each system needs to work together and that's the management challenge in working with complex systems.

What are some of the biggest challenges you have faced as Administrator?

We face daily challenges. Every day is a new day that we are looking to keep our systems safe and efficient. Every day we must be very vigilant about where there is risk and how to mitigate that risk. Proper training and knowledge of procedures is essential to keeping a tight and smooth operation. We have a strong focus and emphasis on training. Sometimes we need to learn what's out there like performance characteristics of both machines and people via analysis of massive amounts of data. We are pleased that in the last decade the data tells us we are working with a very safe system. Before, we used to study accidents but there aren't a lot. There's always still risk, so our focus shifted to how we can ensure safety by using data to prevent issues. This is largely accomplished by sharing data with each other. There has been change between the FAA and the industry we oversee.

We are now working in a much more collaborative, sharing framework. We have mechanisms in place to share information about performance—this is a big cultural shift for the industry. It used to be a top down military type of structure. Through collaboration we will continue to make the industry even safer.

What do you consider your greatest achievement in working at the FAA?

When I leave the FAA in a year and a half, I feel my greatest achievement will have been to help reshape relations between the FAA and the industry. The next generation must now ramp-up the benefits associated with that. For the US to maintain our leadership position in the industry, which is essential for our economy, we must be engaged throughout the rest of the world utilizing best practices across the global system. As people travel from country to country they want safety and efficiency everywhere. The public wants continued improvements such as the ability to now use electrical devices on planes. When the policy about electrical devices was first put in place people were using transistor radios but now analysis demonstrates the risk is minimal.

Final thoughts:

I'm pleased to say that graduates are really coming into the industry at an exciting time. It is very impressive how far we have come in the aviation industry in the last 100 years. We have so much to look at in terms of the deployment and speed of technology and new users like those working with UAVs. You put it all together and we are making lots of daily decisions that will shape what aviation and aerospace will look like for the next 50 years. Graduates are coming into the industry during a time of great change and they will be at the forefront of all this change.

Put on your seatbelts for a great ride!

HIGH FLUX ISOTOPE REACTOR

Students and Faculty Conduct Research at Tennessee's Oak Ridge National Laboratory



FOR THE LAST TWO YEARS Dr. Amir Elzawawy has spent his summer in Tennessee at Oak Ridge National Laboratory (ORNL) the largest US Department of Energy science and energy laboratory. The lab conducts basic and applied research to deliver transformative solutions to compelling problems in energy and security. At the completion of his 2015 10-week stay he received the Spotlight Award for his nuclear research studying the mechanical interaction of high-speed coolant flow in nuclear research reactor fuel plates.

During his time at ORNL, Elzawawy worked on software used for researching nuclear reactors as well as common functions of the human body. He worked inside the High Flux Isotope Reactor (HFIR) and last fall applied the new knowledge to his curriculum. Now his students use multiphysics to understand heat transfer and fluid mechanics.

As a result of his 2015 success, ORNL invited Elzawawy to offer two Vaughn students a 2016 paid summer internship opportunity at ORNL. Mechatronic engineering students Josiah D'Arrigo '16 and Saneela Rabbani '16 were chosen to gain hands-on experience working in a nuclear lab. Under the

direction of Elzawawy, the students conducted nuclear research to minimize the safety risks that can occur when workers are in contact with high- or low-risk uranium reactors.

Both students worked full-time at ORNL for the summer and thoroughly enjoyed the experience. According to D'Arrigo, the project involved creating a new container to hold the materials to replace the old one that was difficult to take apart. The new container was redesigned using COMSOL, a software that simulates fluid flow, to see if there was enough water distributed correctly by the new holder.

As it turned out, near the end of the internship, the students discovered that the new holder was not receiving enough coolant for the design. Rabbani focused on the outer targets in a theoretical project to determine what happens in a worst-case scenario, while D'Arrigo worked on the fluid mechanics challenges of the entire container. Rabbani's research project dealt with "eccentricity and concentric annular channels" that measure what could happen if eccentricity occurs and there is not uniformity in the cylinders to allow for the equal distribution of coolant. "Without proper cooling, things

could melt," Rabbani says, "Something that could obviously be hazardous in a nuclear reactor."

Dr. James Freels, senior research scientist at ORNL, was a true mentor for the project. "He was wonderful," commented Rabbani. "He realized there were certain goals I wanted to accomplish and he challenged me with this theoretical project. Anytime I needed help, he was available." The feedback on Rabbani and D'Arrigo was that they were mature, professional and had a strong work ethic. Freels noted, "They worked on a complicated project and accomplished exactly what we had hoped."

As for the future, Rabbani, who recently graduated, is taking some time off before she decides whether to continue with graduate school at New York University where she was accepted, or go into the workforce where she can apply her newly gained knowledge. Her long-term goal is to attain a PhD in engineering and become a researcher or professor.

Rabbani credits much of her success to her Vaughn College faculty and is especially grateful to Elzawawy for help in securing this valuable internship. "The equipment we used at ORNL was

fantastic, and cut our computing time by days—it was a wonderful experience." She noted that even as the only woman at the facility, and as a Muslim, she felt totally accepted by the people at ORNL and is thinking of applying for a job there. She also loved exploring the local area, including the Smoky Mountains, Knoxville, Dollywood and Lookout Mountain.

D'Arrigo who also graduated in May appreciated the guidance he received from Freels. He enjoyed the experience of working on fluid mechanics, but prefers to do something different for his chosen career. D'Arrigo has applied to the federal government and interviewed for a job located in Virginia. He credits the education he received at Vaughn for his success, appreciating the small faculty-to-student ratio.

In October 2016, both Rabbani and D'Arrigo attended a COMSOL conference in Boston where they presented their research. They were accompanied by Elzawawy who proudly said, "After our work this summer, the High Flex Isotope Reactor group will be incorporating the design modifications that were based on the findings of the Vaughn team!"



SUMMER OPPORTUNITY INSPIRES RISING SOPHOMORE, SAMANTHA MADDALONI '20

Building on her connection to an on-campus speaker, Samantha “Sam” Maddaloni spent two weeks at the National Aeronautics and Space Administration’s (NASA) Langley Research Center. She is studying mechatronic engineering and is a member of the campus’ student chapter of the Society of Women Engineers (SWE) and a founder of the student chapter of Engineers Without Borders (EWB).

Thanks to Vaughn’s industry connections and speaker series, Maddaloni met Dr. Tahani Amer, evaluation and assessment manager in the Independent Program Assessment Office (IPAO) at NASA, when she spoke at Vaughn’s industry connection seminar this past spring.

Dr. Amir Elzawawy, Vaughn’s assistant professor in the engineering and technology department introduced Amer to Maddaloni, expressing that she was a dedicated and hard-working student. After meeting Maddaloni, Amer put her in touch with Mr. Chris Campen, the volunteer coordinator at the Langley Research Center.

Maddaloni’s peers from the SWE assisted her with her resumé and cover letter in which Campen suggested

she write about her enthusiasm for volunteering for NASA and why people would want to work with her.

Maddaloni successfully received four responses from NASA divisions. She contacted all the prospective departments and ultimately selected Melissa Rivers, an aerospace engineer at NASA Langley Research Center’s National Transonic Facility, to work with and act as her mentor. Rivers, who is involved with wind tunnel testing and computational fluid dynamics, spoke to Maddaloni about her field and reviewed the scope and expectations of the position.

Maddaloni’s work involved inputting data from wind tunnel tests into the Tech Plot computer program and generating plots. She also did some independent research on aerodynamics and aeronautics to learn more about the field.

During her time at NASA, Maddaloni gained a great deal of experience from being exposed to diverse projects, staff and interns. As part of her training, she toured and climbed through the wind tunnel and attended an open house at the autonomy incubator which is home to many robotics projects and autonomous systems. She was also shown the robot ISAAC, which is used to build parts and another robot

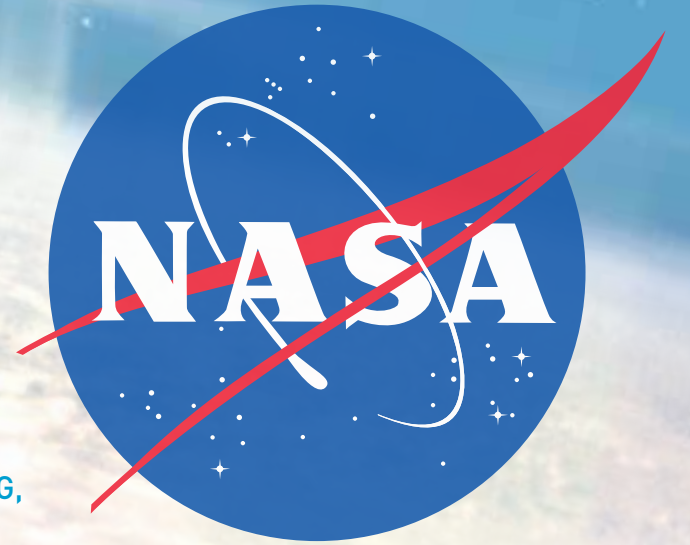


called the TALISMAN, which is a long-arm reaching robot used in space to assist with repairs.

Maddaloni also visited the Gantry that she describes as a massive scaffolding built in the 1960s to teach astronauts how to land on the moon. It is now used for crash/impact testing. During her stay she witnessed an Orion Capsule splash test that took place in a one million gallon

► [The Integrated Structural Assembly of Advanced Composites \(ISAAC\) robot \(left\) at NASA’s Langley Research Center \(right\).](#)

THANKS TO VAUGHN’S **INDUSTRY CONNECTIONS** AND SPEAKER SERIES, **MADDALONI MET DR. TAHANI AMER** FROM NASA WHEN SHE SPOKE AT VAUGHN’S **INDUSTRY CONNECTION SEMINAR THIS PAST SPRING, OPENING THE DOOR TO OPPORTUNITY.**



pool under the Gantry.

In an effort to gain as much as possible from her experience at NASA, Maddaloni also attended the Aeronautics Student Forum where students presented their own research in diverse majors; she met the interns in the program which focuses on earth science and climate issues and she also enjoyed the opportunity to speak with many NASA employees. “I asked lots of questions about the science and engineering

of projects as well as about career opportunities,” she noted. “I spoke with other interns about their majors and internships and received guidance on how to apply.”

She described her program as something she thoroughly enjoyed, “My wonderful experience this summer was two-fold. Aside from the opportunity to work with Ms. Rivers and NASA, I owe many thanks to others: The faculty who helped me obtain the internship,

the students who supported me through the process, and the vice president of enrollment services who helped me to pursue this great opportunity. I’m also very fortunate that NASA subsidized my housing for two weeks.”

As for the future, Maddaloni had this to say: “I confirmed that I want to continue my studies in robotics, and plan to submit an application for a full internship at NASA where I made so many wonderful connections.”



STUDENT | Otha Ward '19

Outstanding performance in the classroom was instrumental in landing Otha Ward a paid internship with Expeditors International at John F. Kennedy International Air Terminal.

A sophomore studying airport management, Ward took advantage of multiple extracurricular opportunities offered by Vaughn, joining the student chapters of Women in Aviation-International and the American Association of Airport Executives. He credits Vaughn's faculty and staff with helping him take the first steps to launching his career.

"I heard about the internship opportunity through an email from the office of career services; they helped me edit my resume and prepare for my interview," said Ward. "I had just finished taking Dr. Peter Canellis' class. He heard that I was applying for a position at Expeditors and put in a good word for me. All of the preparation, paired with Dr. Canellis' recommendation really helped me secure the position."

Ward works on a team that handles the import and export of goods from countries outside the US; an experience he feels has enhanced his educational experience by exposing

him to situations, concepts and information that are taught in his classes. He credits his internship for reinforcing the importance of hard work, attention to detail and time management, and feels a deep sense of pride when his professors ask him how his first internship went.

"They don't treat me like an intern at Expeditors," he says. "They treat me like I'm part of the team."

Ward has always had a passion for aviation, wanting to work in an airport from an early age with the goal of managing one of the nation's major airports. The experiential education he is receiving at Vaughn, paired with the real-life experiences from his internship, continue to strengthen that passion.

"The connections Vaughn College offers make me want to succeed and grow into this industry more than ever."



STUDENT | Waseem Hussain '17

Building drones in Vaughn's computerized design lab inspired Waseem Hussain to launch his first start-up.

A senior studying mechatronic engineering, Hussain began building prototypes of drones early on at Vaughn. That prototyping experience, developing and launching an idea, helped him as he worked with his business partners to brainstorm, develop and then pitch their company, Union Crate, to investors.

It was Assistant Professor in the Engineering and Technology Department Dr. Amir Elzawawy who encouraged Hussain to explore entrepreneurship and the world of startup companies. The fast pace and emphasis on technological advancement sparked his interest, and motivated him to develop his business model.

Union Crate, founded by Hussain and two of his friends, uses hardware and sensors to help suppliers and distributors make smarter decisions about logistics, product shelf life, and inventory. The company was recently accepted into a highly competitive startup accelerator called Techstars, which partners with companies like PricewaterhouseCoopers, Verizon, Bosch and General Electric to provide capital, mentorship and business development support to new and prospective startups. "Entrepreneurship is the best way to disrupt an industry," he notes. "It introduces people to new ideas and technology, which forces development and growth forward."

Active in the Vaughn community, Hussain is a founding member of the unmanned aerial vehicle (UAV) club. The club embraces the opportunity to learn from Vaughn's enthusiastic faculty who, Hussain says, push students to explore new ideas and advance technologies. In addition to the hands-on experience with UAVs, the club took leadership of the first International Drone Day held at Vaughn. This emphasis on experience and leadership both in and out of the classroom, he says, helped him with Union Crate.

Today's ever-growing emphasis on technological advancement is what drives Hussain to succeed and develop innovative solutions. "My goal is to remain active in the startup world and to develop new companies to address market needs," said Hussain.



"Developing new technologies can help change people's lives for the better—improving people's lives is the ultimate success."

FACULTY

Professor Kevin Wicks '80, '85 Aviation Training Institute (ATI)

“My students’ drive is what drives me, every day.”

THAT PHILOSOPHY has led Kevin Wicks to devote a 32-year career to teaching thus far. He received his associate in applied science degree at Vaughn in 1980, while working in aircraft overhaul for Unipak Aviation in Long Island City. He started teaching in the fall of 1984, and simultaneously completed his bachelor of technology degree in 1985. Wicks has seen Vaughn grow with the addition of degree programs, new fields of study and the expansion of the campus.

“Aviation maintenance used to be the primary field of study at the College,” he says. “But over the years I’ve seen other departments grow and, more importantly, watch how they’ve positively impacted student enrollment.” But through all of the institution’s growth, one thing has remained constant: The passion and drive of its students.

“Most Aviation Training Institute students come to Vaughn already knowing what they want to get out of it,” he says. “Their enthusiasm makes it easy to remain invested in their education and success.”

Wicks has a similar passion that is reflected in his lectures. As an alumnus, he knows first-hand what teaching methods are most effective in an ATI classroom, and he uses that knowledge to keep students engaged and inspired. Student success is a key motivator for Wicks, whose dream is to see all of his students walk across the stage at commencement.

“The most fulfilling moment for me as an instructor is handing my students their certificate at the end of the program,” Wicks says. “Because that indicates success for all of us. They have a life full of opportunities ahead of them now, and we did our jobs to get them there.”



“Reclaiming the Sky” author Tom Murphy moderates the resiliency roundtable discussion at Vaughn College on Thursday, September 8.

“RECLAIMING THE SKY” RESILIENCY ROUNDTABLE COMMEMORATES SEPTEMBER 11 AND PROVIDES CONTINUED HEALING

SHARING STORIES of resiliency on the 15th anniversary of September 11 brought together Vaughn veterans and flight attendants from American and United Airlines who lost co-workers on that fateful day. At the Resiliency Roundtable held on Thursday, September 8 participants shared their stories and lessons learned as they moved forward after incredible loss.

Tom Murphy, founder of Edge4Vets and author of “Reclaiming the Sky” organized and moderated the panel. The book chronicled those involved in helping the aviation industry rebuild after 9/11. He provided free copies of his book to students in attendance.

The panel included American Airlines flight attendant Debbie Roland and flight service manager Toni Knisley, whose colleagues were aboard Flight 77 that crashed into the Pentagon, Eileen Ammiano, United Airlines flight attendant trainer for the crew from United’s flight 93 that left Newark and crashed in Pennsylvania airport, and veterans from Edge4Vets who shared their stories of how they developed resiliency strengths to meet challenges and make successful transitions to civilian life. Following the panel, there was an open discussion that included how to seek support from friends and colleagues during challenging times, particularly for veterans as they pursue a new professional direction. The audience included Lt. Dan Carbonara, retired after 34 years from the Port Authority Police Department, the police force that lost 37 officers that day, the most of any police force in US history.

Approximately 15 percent of Vaughn College students are veterans and as a service to this group, Vaughn has long worked with Murphy on his Edge4Vets program that teaches veterans how to translate skills developed in the military to obtain jobs and make successful transitions to civilian life.

Philip Meade, assistant vice president of career services at Vaughn noted, “We’re proud to have a large student population of veterans at Vaughn and do all that we can to support their active organization on campus. Many veteran students pursue careers in commercial aviation, go into management jobs, or become commercial pilots and we are here to help them achieve their goals, including developing resiliency to succeed in all facets of life.”

The roundtable was offered as a tribute to Susan M. Baer, Principal, Aviation Leader at Arup. Baer was also the vice chair of Vaughn’s Board of Trustees and recently passed away (see tribute on page 10).

President Dr. Sharon B. DeVivo attended the event and reflected on Baer’s long relationship with Vaughn College and her trailblazing career. “Sue played a pivotal role in the early response and recovery immediately following the aviation events of 9/11 as the general manager of Newark Liberty International Airport and her efforts are chronicled in ‘Reclaiming the Sky.’ Her strength on that day, and for all the days after, are remembered by all of us who knew her, and her impact on aviation will not be forgotten.”

▶ ALUMNI EVENTS

METS VS. NATIONALS APRIL 29, 2016



◀ The New York Mets squared off against the San Francisco Giants at our annual alumni baseball event at Citi Field. The weather didn't cooperate, but that didn't stop our alumni from enjoying an exciting game as they cheered on their hometown team.

5TH, 10TH AND 15TH ANNIVERSARY REUNION MAY 7, 2016



▶ To commemorate the 5th, 10th and 15th year since graduating, the alumni association invited members from the classes of 2011, 2006 and 2001 to a reception in which they were able to reconnect with each other and the institution.

GRADUATION CELEBRATION MAY 20, 2016



◀ The annual graduation celebration reception at Studio Square NYC brought out alumni and members of the senior class. The event celebrates the accomplishments of the graduating class of 2016 and officially recognizes them as Vaughn alumni.

CUBA TOUR JUNE 13-17, 2016



▶ The alumni association made Cuba their third international destination. Alumni from various years experienced the unique culture of Old Havana and enjoyed the rich traditions of the Caribbean island. In addition to visiting historical sites, the group had the opportunity to ride in vintage cars from the 1950s era.

▶ UPCOMING EVENTS

ENGINEERING AND TECHNOLOGY
DEPARTMENT RECEPTION

Thursday, November 17 | 6 p.m. to 9 p.m.

Vaughn College, 86-01 23rd Avenue, Flushing, NY 11369

Department Chair Dr. Hossein Rahemi, in conjunction with the department, invites alumni from the program to attend a special cocktail reception. Come reconnect with faculty members and classmates.

HOLIDAY RECEPTION FOR ALUMNI AND EMPLOYERS
Thursday, December 8

Vaughn College | 86-01 23rd Avenue, Flushing, NY 11369
6 p.m. to 9 p.m.

Ring in the holidays with employers who have recruited at Vaughn, along with fellow alumni and friends of the College. Enjoy cocktails, hors d'oeuvres and entertainment.

For more information contact Neil Gouveia, director of alumni affairs at 718.429.6600, extension 112 or neil.gouveia@vaughn.edu.



TOUR ICELAND WITH THE ALUMNI ASSOCIATION
February 19 to 24, 2017

Iceland is a volcanic island located in the North Atlantic Ocean and boasts of the majestic Northern Lights and Blue Lagoon geothermal spa. Join us as we explore one of the most exotic locations in the world. Travel and accommodation fees will apply.

New Faces, New Places

The staff and faculty who are in new positions or joined Vaughn College recently:

STAFF

Manuel Adrianzen
purchasing agent/mailroom coordinator

Celso Alvarez
associate vice president of enrollment

Michael Brady
assistant vice president of development and alumni affairs

Kathy Deaner
interim vice president of student affairs

Imtiaz Galib
ATI adviser/counselor
academic support services

Leroy Jemison
activity director/readiness
program coordinator
academic support services

Sean Manning
internship coordinator
career services

Carlos Marin
human resources generalist

FACULTY

Margaret Ducharme
chair of the arts and sciences department
and assistant professor

Jacob Glanzman
mathematics coordinator and assistant
professor in the engineering and
technology department

▶ **VAUGHN IN THE MEDIA**

DAILY NEWS ▶

Vaughn College's robotics team's win at the 2016 VEX Worlds Championship in Louisville, Kentucky on Saturday, April 23 was picked up by 96 outlets, including CNBC, Bloomberg, Yahoo and USA Today. The Daily News featured coverage of Vaughn's win.



▶ **NBC NEW YORK**

On August 18, Stefan Holt, anchor and reporter for NBC New York, interviewed air traffic controller and Vaughn instructor Steven Fanno, and recent Vaughn aeronautical sciences graduate Ethan Address '16 about the institution's air traffic control (ATC) program and the current controller shortage. The segment was filmed in the ATC laboratories where students receive high-level training in tower, terminal, radar, non-radar and en route operations.

▼ **THE QUEENS CHRONICLE**

Vaughn College's celebration of International Drone Day on May 7 was mentioned in Forbes, on the New York Post's website, Fox News and in a number of local newspapers including an article in the Queens Chronicle.



▲ **NY1 NEWS**

News coverage of the "Reclaiming the Sky" Resiliency Roundtable hosted at Vaughn on September 8 ran in the Queens Chronicle and Times Ledger. A reporter from NY1 interviewed Vaughn veteran student Bill Schwager '17 and American Airlines flight attendant Debbie Roland.



**VAUGHN COLLEGE:
THE OFFICAL BLOG**

ORIGINAL POSTS BY STUDENTS OF
VAUGHN COLLEGE

Current research shows that one of the drivers for selecting a college is hearing from current students. Vaughn College developed a blog where Vaughn students provide prospective students insight into everyday college life. Students from all programs — engineering, technology, management and aviation share their posts at vaughn.edu/blog

FRAY HOLNESS '20

International transfer student discusses how orientation helped him transition and achieve his educational goals.

"My First Week at Vaughn"

In fall 2015, Fray Holness '20 began his first week at Vaughn College. He was a transfer student from Kingston, Jamaica with an associate degree in air transport management, and was looking to expand his education to land a successful career in aviation management. Vaughn was his clear choice for many reasons, but when he experienced the welcoming atmosphere during orientation (known as "Welcome Week" at Vaughn), his decision was only validated.



"I found there were few institutions that offered a double major in my field," Holness said. "Vaughn's airport/airline management program meshed with my interests and was the perfect fit for me." He also moved into the on-campus residence hall to get the full Vaughn experience.

"I advise new students to make the most of their experience. Get involved and meet as many people as you can. Join on-campus activities and clubs as a way to meet new people. It's a great way to promote a positive and inviting atmosphere on campus and bring students together," Holness said. "Vaughn is a very welcoming campus, with students and faculty that are always willing to listen and offer advice. Never think you can do everything on your own."

Holness quickly realized that the networking and job opportunities he'd be exposed to at Vaughn would be invaluable. He knew his degree would be the stepping stone he needed to meet his long-term career goal of designing and building airports. "Companies look to Vaughn to recruit students, knowing they have all the necessary knowledge, education and training to succeed in whichever field they choose."

As he enters his junior year, Holness says applying to Vaughn was the best decision he ever made. "Vaughn prepares us with the knowledge we need not just for now, but for the future."

3D PROTOTYPING INNOVATION CENTER OPENS



THE ENGINEERING AND TECHNOLOGY DEPARTMENT

has inaugurated a 3D prototyping innovation center equipped with 15 high-quality 3D printers and two 3D scanners. Faculty and students will be able to use the 3D prototyping innovation center to design a three dimensional object from any existing computer-aided design software and manufacture the solid part using 3D printers. Capstone degree project students and the unmanned aerial vehicle and robotics clubs use 3D printers to design and build mechanical parts for their projects such as gear systems, body frames, launcher motion components and conveyor frame supports. The center was funded by a federal grant.